



UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION I
475 ALLENDALE ROAD
KING OF PRUSSIA, PA 19406-1415

May 13, 2011

Mr. David Heacock
President and Chief Nuclear Officer
Dominion Resources
5000 Dominion Boulevard
Glen Allen, VA 23060-6711

SUBJECT: MILLSTONE POWER STATION – NRC TEMPORARY INSTRUCTION 2515/183
INSPECTION REPORT 05000245/2011009, 05000336/2011009, AND
05000423/2011009

Dear Mr. Heacock:

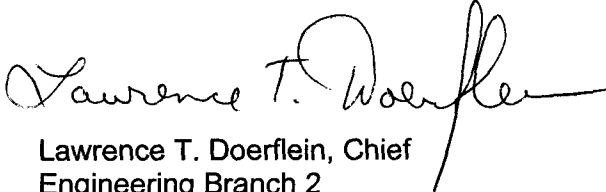
On April 28, 2011, the U.S. Nuclear Regulatory Commission (NRC) completed an inspection at the Millstone Power Station, using Temporary Instruction 2515/183, "Followup to the Fukushima Daiichi Nuclear Station Fuel Damage Event." The enclosed inspection report documents the inspection results which were discussed on April 28, 2011, with Mr. Richard McManus and other members of your staff.

The objective of this inspection was to promptly assess the capabilities of Millstone Power Station to respond to extraordinary consequences similar to those that have recently occurred at the Japanese Fukushima Daiichi Nuclear Station. The results from this inspection, along with the results from this inspection performed at other operating commercial nuclear plants in the United States will be used to evaluate the United States nuclear industry's readiness to safely respond to similar events. These results will also help the NRC to determine if additional regulatory actions are warranted.

All of the potential issues and observations identified by this inspection are contained in this report. The NRC's Reactor Oversight Process will further evaluate any issues to determine if they are regulatory findings or violations. Any resulting findings or violations will be documented by the NRC in a separate report. You are not required to respond to this letter.

In accordance with 10 CFR 2.390 of the NRC's "Rules of Practice," a copy of this letter and its enclosure will be made available electronically for public inspection in the NRC Public Document Room or from the Publicly Available Records (PARS) component of NRC's Agencywide Documents Access and Management System (ADAMS), accessible from the NRC Web site at <http://www.nrc.gov/reading-rm/adams.html> (the Public Electronic Reading Room).

Sincerely,


Lawrence T. Doerflein, Chief
Engineering Branch 2
Division of Reactor Safety

Docket Nos.: 50-245, 50-336, 50-423,
License Nos.: DPR-21, DPR-65, NPF-49

Enclosure: Inspection Reports 05000245/2011009, 05000336/2011009, and
05000423/2011009

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Sincerely,

/RA/

Lawrence T. Doerflein, Chief
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U. S. NUCLEAR REGULATORY COMMISSION

REGION I

Docket Nos: 50-245, 50-336, 50-423,

License Nos: DPR-21, DPR-65, NPF-49

Report No: 05000245/2011009, 05000336/2011009, and 05000423/2011009

Licensee: Dominion Nuclear Connecticut, Inc.

Facility: Millstone Power Station, Units 1, 2, and 3

Location: P.O. Box 128
Waterford, CT 06385

Dates: April 1, 2011 through April 28 2011

Inspectors: S. Shaffer, Senior Resident Inspector, Millstone Power Station
Kevin Mangan, Senior Reactor Inspector, Division of Reactor Safety
J. Krafty, Resident Inspector, Millstone Power Station
B. Haagensen, Resident Inspector, Millstone Power Station

Approved by: Lawrence T. Doerflein, Chief
Engineering Branch 2
Division of Reactor Safety

SUMMARY OF FINDINGS

IR 05000245/2011009, 05000336/2011009, and 05000423/2011009; 04/01/2011 – 04/29/2011; Millstone Power Station, Units 1, 2 and 3; Temporary Instruction 2515/183 - Followup to the Fukushima Daiichi Nuclear Station Fuel Damage Event.

This report covers an announced Temporary Instruction (TI) inspection. The inspection was conducted by three resident inspectors and a region based inspector. The NRC's program for overseeing the safe operation of commercial nuclear power reactors is described in NUREG-1649, "Reactor Oversight Process," Revision 4, dated December 2006.

INSPECTION SCOPE

The intent of the TI is to provide a broad overview of the industry's preparedness for events that may exceed the current design basis for a plant. The focus of the TI was on (1) assessing the licensee's capability to mitigate consequences from large fires or explosions on site, (2) assessing the licensee's capability to mitigate station blackout (SBO) conditions, (3) assessing the licensee's capability to mitigate internal and external flooding events accounted for by the station's design, and (4) assessing the thoroughness of the licensee's walkdowns and inspections of important equipment needed to mitigate fire and flood events to identify the potential that the equipment's function could be lost during seismic events possible for the site. If necessary, a more specific followup inspection will be performed at a later date.

INSPECTION RESULTS

All of the potential issues and observations identified by this inspection are contained in this report. The NRC's Reactor Oversight Process will further evaluate any issues to determine if they are regulatory findings or violations. Any resulting findings or violations will be documented by the NRC in a separate report.

03.01 Assess the licensee's capability to mitigate conditions that result from beyond design basis events, typically bounded by security threats, committed to as part of NRC Security Order Section B.5.b issued February 25, 2002, and severe accident management guidelines and as required by Title 10 of the Code of Federal Regulations (10 CFR) 50.54(hh). Use Inspection Procedure (IP) 71111.05T, "Fire Protection (Triennial)," Section 02.03 and 03.03 as a guideline. If IP 71111.05T was recently performed at the facility the inspector should review the inspection results and findings to identify any other potential areas of inspection. Particular emphasis should be placed on strategies related to the spent fuel pool. The inspection should include, but not be limited to, an assessment of any licensee actions to:

| Licensee Action | Describe what the licensee did to test or inspect equipment. |
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| <p>a. Verify through test or inspection that equipment is available and functional. Active equipment shall be tested and passive equipment shall be walked down and inspected. It is not expected that permanently installed equipment that is tested under an existing regulatory testing program be retested.</p> <p>This review should be done for a reasonable sample of mitigating strategies/equipment.</p> | <p>Licensee actions included the identification of equipment (active and passive) utilized for implementation of B.5.b actions and any additional equipment used in Severe Accident Management Guidelines (SAMG). The scope of the equipment was defined as that equipment specifically designated for B.5.b or SAMG mitigation (i.e., special hoses, fittings, diesel fire pump, etc.). Permanent plant equipment (i.e., in situ equipment) was not considered in the scope, since it is normally in service, subjected to planned maintenance, and/or checked on operator rounds. The licensee then identified surveillances/tests and performance frequencies for the identified equipment, and reviewed the results of recent tests. Active equipment within the scope defined above that did not have recent test results was tested. Passive equipment within the scope was walked down and inspected.</p> |
| | <p>Describe inspector actions taken to confirm equipment readiness (e.g., observed a test, reviewed test results, discussed actions, reviewed records, etc.).</p> |

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| | <p>The inspectors assessed the licensee's capabilities by conducting a review of the licensee's walkdown activities. In addition, the inspectors independently walked down and inspected all major B.5.b contingency response equipment staged throughout the site. The results of the inspectors' independent walkdowns confirmed the results obtained by the licensee.</p> <p>The inspectors determined that the B.5.b strategy was not required to be applied to the Unit 1 spent fuel pool. However, the inspector reviewed procedures developed by the licensee to respond to a B.5.b type event. Additionally the inspector walked down the spent fuel pool and the paths where mitigating equipment would be employed. Documents reviewed by the inspectors are listed in the Supplemental Information Attachment to this report.</p> |
| | <p>Discuss general results including corrective actions by licensee.</p> |
| | <p>All equipment (active and passive) designated for B.5.b was verified by the licensee to be in applicable procedures. All passive equipment was walked down and verified to be in place and ready for use. Passive equipment which had surveillance and/or preventative maintenance tasks had those activities performed to verify readiness for use.</p> <p>All active equipment located at the site was verified in place by the licensee. Dominion retested selected active equipment on site. Equipment was verified to be within the required surveillance test interval.</p> <p>Based on the results of the licensee reviews and their own walkdowns, the inspectors concluded that the required equipment is available and functional.</p> |

| Licensee Action | Describe the licensee's actions to verify that procedures are in place and can be executed (e.g. walkdowns, demonstrations, tests, etc.). |
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| <p>b. Verify through walkdowns or demonstration that procedures to implement the strategies associated with B.5.b and 10 CFR 50.54(hh) are in place and are executable. Licensees may choose not to connect or operate permanently installed equipment during this verification.</p> <p>This review should be done for a reasonable sample of mitigating strategies/equipment.</p> | <p>Licensee actions included the identification of those procedures utilized to mitigate the consequences of a B.5.b related event and severe accidents. Dominion then compiled verification documentation for procedure validations and identified any procedures not issued or validated and any with open change requests. Open change requests were reviewed for potential impacts on procedure functionality. Licensee personnel were then dispatched to walk down all applicable procedures to verify the ability of the procedures to be executed.</p> |
| | <p>Describe inspector actions and the sample strategies reviewed. Assess whether procedures were in place and could be used as intended.</p> |
| | <p>The inspectors assessed the licensee's capabilities by conducting a review of the licensee's walkdown activities. In addition, the inspectors selected several sections of a sample of the procedures walked down by the licensee and walked those down to independently verify the licensee's conclusions. Documents reviewed by the inspectors are listed in the Supplemental Information Attachment.</p> |
| | <p>Discuss general results including corrective actions by licensee.</p> |

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| | <p>Dominion reviewed SAMG strategies and did not identify any issues. Procedures used for B.5.b were reviewed by the licensee and walkdowns were performed by operators to ensure actions taken in the field in response to a B.5.b event could be performed. Open procedure change requests were reviewed by the licensee to verify there were no immediate procedure changes required. Some minor enhancements were identified by the licensee and entered into the Corrective Action Program (CAP).</p> <p>The inspectors identified an enhancement associated with the positioning of the Unit 1 spent fuel pool crane. The licensee entered the issue into the corrective action program (CR 422447).</p> <p>Based on the results of their reviews the inspectors concluded that that procedures to implement the strategies associated with B.5.b and 10 CFR 50.54(hh) are in place and are executable.</p> |
| Licensee Action | Describe the licensee's actions and conclusions regarding training and qualifications of operators and support staff. |
| c. Verify the training and qualifications of operators and the support staff needed to implement the procedures and work instructions are current for activities related to Security Order Section B.5.b and severe accident management guidelines as required by 10 CFR 50.54 (hh). | <p>Licensee actions included the identification of training/qualification requirements for operators for the implementation of actions needed to mitigate a B.5.b related event, and for the implementation of actions needed for the SAMG. The licensee documented that operator training requirements were current, and identified those operators with qualification requirements that were not current. The number of individual with non-current qualifications was small and mainly associated with individuals still in the initial training phase of their qualifications. In addition, the licensee identified the training/qualification requirements for applicable emergency response organization (ERO) command and support staff for the implementation of actions needed to mitigate a B.5.b related event, and for the implementation of actions needed for the SAMGs, and documented that ERO command and support staff training requirements were current. Where applicable, those ERO command and support staff with qualification requirements that were not current were identified.</p> <p>Describe inspector actions and the sample strategies reviewed to assess training and qualifications of operators and support staff.</p> |

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| | <p>The inspectors assessed the licensee's training and qualification activities by conducting a review of training and qualification materials and records related to B.5.b and SAMG event response.</p> <p>Based on the reviews completed, the inspectors concluded that the training and qualifications of operators and the support staff needed to implement the procedures and work instructions are current for activities related to Security Order Section B.5.b and severe accident management guidelines as required by 10 CFR 50.54 (hh).</p> <p>Documents reviewed by the inspectors are listed in the Supplemental Information Attachment.</p> |
| | <p>Discuss general results including corrective actions by licensee.</p> |
| | <p>The training requirements, qualifications, and associated records needed for operators for the implementation of SAMGs and B.5.b event response were reviewed by the licensee. Training was identified for shift managers, shift engineers, and unit supervisors, and verified that the training requirements were embedded within the position qualifications for the operators. Dominion confirmed that all shift operators verify their qualifications prior to assuming a shift position. The training requirements, qualifications, and associated records needed for ERO command and support staff for the implementation of actions needed to mitigate a B.5.b event or implement the SAMGs were also reviewed. All ERO command and support staff training requirements were verified as current by the licensee.</p> <p>Based on the reviews conducted, the inspectors concluded that the training and qualifications of operators and the support staff needed to implement the procedures and work instructions are current for activities related to Security Order Section B.5.b and SAMGs as required by 10 CFR 50.54 (hh).</p> |
| <p>Licensee Action</p> | <p>Describe the licensee's actions and conclusions regarding applicable agreements and contracts are in place.</p> |

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| <p>d. Verify that any applicable agreements and contracts are in place and are capable of meeting the conditions needed to mitigate the consequences of these events.</p> <p>This review should be done for a reasonable sample of mitigating strategies/equipment.</p> | <p>Licensee actions included the identification of all 16 applicable agreements committed to be in place for offsite support for the emergency plan, including equipment and services to mitigate a B.5.b related event. The licensee verified that the agreements were current, and documented whether or not the required offsite equipment and services were available.</p> |
| | <p>For a sample of mitigating strategies involving contracts or agreements with offsite entities, describe inspector actions to confirm agreements and contracts are in place and current (e.g., confirm that offsite fire assistance agreement is in place and current).</p> |
| | <p>The inspectors assessed the licensee's capabilities by conducting an independent review of the licensee's emergency response agreements with the Town of Waterford Town Fire Commission, and Electric Boat Corporation. The inspectors' review of the agreements verified that they were current, and assessed whether or not they were adequate for meeting the licensee's mitigation strategy.</p> <p>Documents reviewed by the inspectors are listed in the Supplemental Information Attachment.</p> |
| | <p>Discuss general results including corrective actions by licensee.</p> |
| | <p>Dominion reviewed their letter of agreement with the Town of Waterford Fire Commission. The letter of agreement was last revised in November 2008. The Fire Chief was contacted by the licensee as part of their review efforts to ensure that the letter of agreement was still in effect and that no changes were necessary. The Fire Chief confirmed the status of the letter of agreement. In addition, the licensee also verified the list of available vendors for portable pumps and generators had changed. During the course of their review, the licensee updated their offsite vendor list.</p> <p>Based on their review, the inspectors concluded that applicable agreements and contracts are in place and are capable of meeting the conditions needed to mitigate the consequences of these events.</p> |

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| Licensee Action | Document the corrective action report number and briefly summarize problems noted by the licensee that have significant potential to prevent the success of any existing mitigating strategy. |
| e. Review any open corrective action documents to assess problems with mitigating strategy implementation identified by the licensee. Assess the impact of the problem on the mitigating capability and the remaining capability that is not impacted. | The inspectors reviewed each condition report (CR) listed in the Supplemental Information for potential impact to the licensee's mitigation strategies. No significant impacts were identified. |

03.02 Assess the licensee's capability to mitigate station blackout (SBO) conditions, as required by 10 CFR 50.63, "Loss of All Alternating Current Power," and station design, is functional and valid. Refer to TI 2515/120, "Inspection of Implementation of Station Blackout Rule Multi-Plant Action Item A-22" as a guideline. It is not intended that TI 2515/120 be completely reinspected. The inspection should include, but not be limited to, an assessment of any licensee actions to:

| Licensee Action | Describe the licensee's actions to verify the adequacy of equipment needed to mitigate an SBO event. |
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| a. Verify through walkdowns and inspection that all required materials are adequate and properly staged, tested, and maintained. | Dominion actions included the identification of equipment utilized/required for mitigation of a SBO. Dominion conducted walkdowns of this equipment to ensure they were adequate and properly staged. Additionally, the licensee conducted a review of open CRs for potential SBO impact. |
| | Describe inspector actions to verify equipment is available and useable. |
| | The inspectors assessed the licensee's capability to mitigate SBO conditions by conducting a review of Dominion's walkdown activities. In addition, the inspectors selected a sample of equipment utilized/required for mitigation of a SBO and conducted independent walkdowns of that equipment to ensure that it was properly aligned and staged. The sample of equipment selected by the inspectors included, but was not limited to, the SBO diesel generator and its auxiliaries. Documents reviewed by the inspectors are listed in the Supplemental Information Attachment. |
| | Discuss general results including corrective actions by licensee. |
| | <p>In general, Dominion's reviews verified that SBO equipment was ready to respond to a SBO condition. The licensee identified a number of enhancements during their review and these were entered in to their corrective action program. The CRs are listed in the Supplemental Information Attachment.</p> <p>Based on the their reviews, the inspectors concluded that the required equipment was properly staged, tested and maintained.</p> |

| Licensee Action | Describe the licensee's actions to verify the capability to mitigate an SBO event. |
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| b. Demonstrate through walkdowns that procedures for response to an SBO are executable. | <p>Dominion actions included the identification of procedures required for response to a SBO, along with verification that the identified procedures were current and that no critical revision requests were in progress. Dominion verified that the mitigating procedures had been properly validated. Additionally, Dominion conducted a review of their corrective action program for any condition reports which had the potential to impact the SBO procedures.</p> |
| | <p>Describe inspector actions to assess whether procedures were in place and could be used as intended.</p> |
| | <p>The inspectors assessed the licensee's capabilities by conducting a review of Dominion's validation activities. In addition, the inspectors selected several sections of a sample of SBO procedures and walked those down with a Dominion senior reactor operator to independently verify the licensee's conclusions.</p> <p>Documents reviewed by the inspectors are listed in the Supplemental Information Attachment.</p> |
| | <p>Discuss general results including corrective actions by licensee.</p> |
| | <p>The Dominion procedures utilized to respond to a SBO are within the site's emergency operating procedures (EOP). Actions to start the SBO diesel generator and supply power to site essential loads are performed from permanently installed equipment in the plant. For purposes of this requirement, the licensee credited their original validation of the specific EOPs by a crew of licensed operators prior to the implementation of the current revision. No current issues were identified by the licensee. Based on the activities discussed above, the inspectors concluded that the procedures for responding to an SBO were executable.</p> |

03.03 Assess the licensee's capability to mitigate internal and external flooding events required by station design. Refer to IP 71111.01, "Adverse Weather Protection," Section 02.04, "Evaluate Readiness to Cope with External Flooding" as a guideline. The inspection should include, but not be limited to, an assessment of any licensee actions to verify through walkdowns and inspections that all required materials and equipment are adequate and properly staged. These walkdowns and inspections shall include verification that accessible doors, barriers, and penetration seals are functional.

| Licensee Action | Describe the licensee's actions to verify the capability to mitigate existing design basis flooding events. |
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| a. Verify through walkdowns and inspection that all required materials are adequate and properly staged, tested, and maintained. | Dominion walked through their abnormal operating procedures dealing with internal and external flooding to verify that the procedures could be completed as written. Watertight doors and flood gates were checked to ensure they were functional. Dominion performed walkdowns of flood protection equipment to ensure that it was properly staged. |
| | Describe inspector actions to verify equipment is available and useable. Assess whether procedures were in place and could be used as intended. |
| | <p>The inspectors assessed Dominion's capabilities to mitigate flooding by conducting a review of their walkdown activities. The reviews involved accompanying Dominion personnel during their walkdown and conducting independent walkdowns of the abnormal operating procedures and flood mitigation equipment. The inspectors' conclusions aligned with the results obtained by Dominion.</p> <p>Documents reviewed by the inspectors are listed in the Supplemental Information Attachment.</p> |
| | Discuss general results including corrective actions by licensee. |

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| | <p>The inspectors concluded that all required materials are adequate and properly staged, tested, and maintained to respond to an internal or external flood within the Millstone design basis. While no operability or significant concerns were identified, Dominion identified a few minor deficiencies during their walkdowns and initiated CRs to address them. The CRs are listed in the Supplemental Information Attachment of this report. The inspector reviewed the associated CRs and determined that the licensee's initial responses, including their assessment and prioritization, were appropriate.</p> |
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| <p>03.04 Assess the thoroughness of the licensee's walkdowns and inspections of important equipment needed to mitigate fire and flood events to identify the potential that the equipment's function could be lost during seismic events possible for the site. Assess the licensee's development of any new mitigating strategies for identified vulnerabilities (e.g., entered it in to the corrective action program and any immediate actions taken). As a minimum, the licensee should have performed walkdowns and inspections of important equipment (permanent and temporary) such as storage tanks, plant water intake structures, and fire and flood response equipment; and developed mitigating strategies to cope with the loss of that important function. Use IP 71111.21, "Component Design Basis Inspection," Appendix 3, "Component Walkdown Considerations," as a guideline to assess the thoroughness of the licensee's walkdowns and inspections.</p> | |
| <p>Licensee Action</p> | <p>Describe the licensee's actions to assess the potential impact of seismic events on the availability of equipment used in fire and flooding mitigation strategies.</p> |
| <p>a. Verify through walkdowns that all required materials are adequate and properly staged, tested, and maintained.</p> | <p>Dominion engineers walked down fire and flooding equipment to determine the impact of seismic events on station fire and flooding mitigation strategies. Dominion engineers examined equipment that is seismically qualified, seismically rugged, or vulnerable to seismic events. For the equipment that was vulnerable to seismic events, the engineers determined if there were mitigating strategies in place or that further evaluation was needed.</p> |
| | <p>Describe inspector actions to verify equipment is available and useable. Assess whether procedures were in place and could be used as intended.</p> |

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| | <p>The inspectors conducted multiple walkdowns, both independently and in conjunction with licensee personnel, of important equipment needed to mitigate fire and flood events to identify the potential that the equipment's function could be lost during a seismic event. This equipment included, but was not limited to:</p> <ul style="list-style-type: none"> • all major B.5.b contingency response equipment staged throughout the site; • the installed diesel and electric fire pumps and their controls; and • watertight doors, flood doors, and flood protection equipment <p>Licensee flood and fire mitigation procedures were reviewed to verify usability. The results of the inspectors' reviews aligned with the licensee's conclusions that there were a number of seismic vulnerabilities that potentially need to be addressed, as described below. The inspectors determined that the licensee meets current licensing and design basis for B.5.b, fire protection, and flooding.</p> <p>Documents reviewed by the inspectors are listed in the Supplemental Information Attachment.</p> <p>Discuss general results including corrective actions by licensee. Briefly summarize any new mitigating strategies identified by the licensee as a result of their reviews.</p> |
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| | <p>As noted above, the inspectors determined that the licensee meets current licensing and design basis for B.5.b, fire protection, and flooding. "Seismically qualified" is defined as the structures, systems, and components (SSC) that have been formally qualified to function during and after a design basis earthquake. The licensee's reviews determined that non-safety related SSCs, in general, were not considered to be either seismically qualified or seismically rugged. The majority of room flood mitigation sump pumps and flooding detectors were not designed as seismically qualified and have not been evaluated as being seismically rugged. Similarly, the vast majority of the fire protection system, including both installed fire pumps, was not designed as seismically qualified and cannot be considered seismically rugged. Firefighting equipment staged to respond to B.5.b events was not stowed in seismically qualified buildings and locations, as a seismic event and B.5.b event were not assumed to occur coincidentally. Finally, the inspectors determined that the access pathways to the spent fuel pool island, although robustly designed, could not be verified to withstand seismic loading. The licensee entered these issues into a beyond design basis database for further evaluation.</p> <p>Dominion's preliminary reviews identified instances where seismic event response capability could be enhanced. These included improving procedural guidance and reviewing the locations of portable equipment. Final resolution and/or mitigating strategies were still under evaluation at the close of this inspection.</p> <p>The inspector determined that the Unit 1 fire main isolation valve would need to be operated to pressurize the fire main to mitigate a fire in Unit 1, but the valve would be under water (inaccessible) following a design basis flood event. This item required further evaluation and was documented in Dominion's CAP.</p> |
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Meetings

4OA6 Exit Meeting

The inspector presented the inspections results for the Unit 1 spent fuel pool to Mr. R MacManus and other members of the licensee management on April 15, 2011. The inspectors presented the remaining inspection results to Mr. MacManus and other members of licensee management at the conclusion of the inspection on April 28, 2011. The inspectors asked the licensee whether any materials examined during the inspection should be considered proprietary. No proprietary information was identified.

SUPPLEMENTAL INFORMATION

KEY POINTS OF CONTACT

Licensee

R. MacManus, Director of Safety and Licensing
T. Cleary, Supervisor, Licensing
B. Bartron, Supervisor Licensing
T. Berger, Shift Manager Unit 3
S. Baker, Former Shift Manager, Unit 2

LIST OF DOCUMENTS REVIEWED

The following is a list of documents reviewed during the inspection. Inclusion on this list does not imply that the NRC inspectors reviewed the documents in their entirety but rather that selected sections or portions of the documents were evaluated as part of the overall inspection effort. Inclusion of a document on this list does not imply NRC acceptance of the document or any part of it, unless this is stated in the body of the inspection report.

03.01 Assess the licensee's capability to mitigate conditions that result from beyond design basis events

Procedures:

AOP 2578, Loss of Refuel Pool and Spent Fuel Pool Level, Rev.006-02
EDMG 2.02 Att. 10, Spent Fuel Pool Mitigation Strategies, Rev. 006
EDMG 2.02 Att. 8, Alternative Methods to Inject Into Containment, Rev. 006
EOP 3505A, Loss of Spent Fuel Pool Cooling, Rev. 008-02
SACGR-2, Severe Accident Control Room Guidelines for Transients after the TSC is Activated, Rev. 002
SACGR-3, Severe Accident Control Room Guidelines for MP# B.5.b Initial Event Response (EDMG), Rev. 003
SACRG-1, Severe Accident Control Room Guidelines Initial Response, Rev. 009
SAG-9, App. B, Unit 3 RCS Cooldown, Rev. 011
SAG-9, App. L, Unit 3 Filling Steam Generators through Blowdown Piping, Rev. 011
SAG-9, Att. H, Unit 3 Alternate Methods to Inject into Containment, Rev. 011
SAG-9, MP3 B.5.b Event TSC Response, Rev. 010
SAMG 4212, Severe Accident Mitigation Guideline Phase 2, Verification of Diagnosis, Rev. 002
SAMG 4213, Severe Accident Mitigation Guideline Phase 3, CHLA Implementation, Rev. 001

Condition Reports:

CR412308, EDMG 2.01 Needs Minor Enhancements
CR417399, Procedure Enhancement for AOP-3570, Earthquake
CR417954, Spare Appendix 'R' Service Water Motor Removed from Site without TRM Action
CR418448, Corrections Required for SAG-4 Inject into Containment
CR418450, Corrections Required for SAG-5 Reduce Fission Product Releases
CR418451, Editorial Change to SCG-2 Depressurize Containment
CR418452, Corrections required for SAG-8 Flood Containment
CR418454, Editorial Changes to SCG-3 Control Hydrogen Flammability
CR418455, Editorial Changes to SAG-1, Injection into the Steam Generators
CR418456, Corrections Required for SACGR-1 Severe Accident CR Guidelines Initial Response
CR418464, Corrections Required for CA-5 Containment Water Level and Volume
CR418468, Changes Required for CA-1 RCS Injection to Recover Core
CR418471, Changes Required for SACRG-2 Severe Accident CR Guideline for Transients
CR418473, Corrections Required for SCG-1 Mitigate Fission Product Releases
CR418512, Procedure Corrections Required for SCG-4 Control Containment Vacuum
CR418550, Test Protected Area Lighting for Compliance with B.5.b Criteria
CR418607, Rectifier for B.5.b Response Strategy Not Working
CR418805, SAMG 4215 Att. 1 Refers to Hydrogen Recombiners
CR418807, INPO Event Review 11-01 Issue, pH Buffer Control Post Severe Accident
CR418825, SAMG 4213 Att. 4 Refers to Containment Annulus Gas Space
CR418886, Enhancements to Security Procedures SCIP 14 and SCIP 15
CR418982, Procedure SAG-9 has a Typographical Error
CR419204, Alternative Cool Vests Should be Researched for Use in EDMG 2.02
CR419213, EDMG 2.02 Att. 11 Requirement for Cutting into AB Roof
CR419280, Need to Identify and Stage MT&E Identified in EDMG/SAMG Space
CR419281, ECA-0.0 Attachment 1 Contains Typographical Error and Requires Revision
CR419649, NRC Inspection Identifies Enhancements to Procedure SAG
CR419952, IER 11-1 Walkdowns and Inspections
CR419953, IER 11-1 Walkdowns and Inspections
CR421310, SAMGs Need Enhancement
CR421939, CR to Track IER 11-1 Enhancements
CR424710, Spool Piece Lagging Identified in AG 4 and SAG 8 Needs Labeling
CR442447, Control of Unit 1 Refuel Platform Position in SFP Needs Enhancement

Other:

99-ENG-01906-M1, Transient and Steady State Temperature of MP1 SFP and RB with no Active SFP Cooling, Rev. 0
Dominion Fleet Response to IER L1 11-1, Fukushima Daiichi Nuclear Station Fuel Damage Caused by Earthquake and Tsunami, Attachment 2: Millstone Units 1, 2 and 3, 4/15/11
Drill Form, B.5.b Spent Fuel Pool Drill Evaluation: Unit 2 External Water Supply
Drill Form, B.5.b Spent Fuel Pool Drill Evaluation: Unit 3 External Water Supply
Lesson Plan, MB-307, Unit 2 Severe Accident Mitigation Guidelines
Lesson Plan, Unit 3 Severe Accident Mitigation Guidelines Overview

MB-010-010, Qualification Status: All Assignments/Nuclear Training Information Management System, 4/1/11

Memorandum, B.5.b Strategy Evaluations Millstone Unit 2, 8/11/08

Memorandum, B.5.b Strategy Evaluations Millstone Unit 3, 8/11/08

Memorandum, Revised Steam Generator Depressurization Evaluation B.5.b Strategy Evaluation MP2, 2/23/09

SP21, Unit 2 Appendix 'R' Fire Cage Inventory, Rev. 001-03

03.02 Assess the licensee's capability to mitigate station blackout (SBO) conditions

Procedures:

EOP 2530, Station Blackout, Rev. 011-02

EOP 2541, Appendix I, Millstone Unit 2 Diagnostic Flowchart, Rev. 001

EOP 35 ECA-0.0, Loss of all AC Power, Rev. 022-02

ONP 540F, Loss of Normal Power, Rev. 002-02

OP 3346D, Station Blackout Diesel, Rev. 011-09

Condition Reports:

CR410806, Insufficient Level of Detail for SBO Use in MP2 Procedures

CR418703, Procedure Change Needed to OP 3346D, Station Blackout Diesel

CR418706, Procedure Change Needed to OP 3346D, Station Blackout Diesel

CR419309, AOP 3577 Refers to TRM 7.4.1 for ACTIONS Only for 'A' Train Components

CR421662, Procedural enhancements to ONP 540F, Loss of Normal Power

CR421664, Procedural Improvements for AOP 2583, Loss of all AC Power during Shutdown Conditions

Other:

WO 53102370098

WO 53102382634

WO 53102393827

03.03 Assess the licensee's capability to mitigate internal and external flooding events required by station design

Procedures:

AOP 2560, Storms, High Winds and High Tides, Rev. 010-05

AOP 3569, Severe Weather Conditions, Rev. 016-00

Condition Reports:

CR417719, Emergency Addition of Fuel Oil to Unit 2 EDG Compromised

CR418059, No Steps to Fill EDG Supply Tanks if EDG Fuel Oil Storage Tank not Available

CR418749, Not Enough Qualified Electricians to Protect SW Pump in a Flood

CR419539, Gap in East Switchgear Room Door (C-4-1A) when Closed

CR419952, Support Missing from Conduit for Load Center 32D
CR419953, Degraded Restraint for Manway Cover for 3EMH*4
CR4200238, Storage of Unit 1 Temporary Diesel
CR420060, Safety Line not Staged
CR420065, Procedure Enhancement for MP2721C
CR420106, Fire Pump House Floor Drain Plug Cannot be Installed Due to Welded Drain Screen
CR420239, Procedure Enhancement for AOP 2560
CR420495, 2" Floor Penetration to TDAFW Pump Room Missing 4" Flood Protection Sleeve

03.04 Assess the thoroughness of the licensee's walkdowns and inspections of important equipment needed to mitigate fire and flood events to identify the potential that the equipment's function could be lost during seismic events

Procedures:

AOP 2559, Fire, Rev. 008
AOP 2562, Earthquake, Rev. 006-04
AOP 3570, Earthquake, Rev. 013-01
EOP 3509, Fire Emergency, Rev. 024-02
ONP 505, Fire, Rev. 006-02
ONP 514C, Earthquake, Rev. 005-02
ONP 532, Loss of Spent Fuel Pool Cooling, Rev. 005-07
SFP 31, Fire Water System Back-up Supply Plan, Rev. 004-03

Calculations/Evaluations:

MP1SFP-040001F1, Millstone 1 Spent Fuel Pool no Boraflex Credit, Rev. 0
MP1SFP-01976F1, Millstone 1 Spent Fuel Pool Criticality Analysis Documentation, Rev. 1

Condition Reports:

CR420776, Procedure Enhancement to AOP 2562
CR420797, Unit 2 Seismic Monitoring System Becoming Obsolete

Other:

Safety Evaluation, Millstone Nuclear Power Station, Unit 1 Modifications to Spent Fuel Storage Pool, 7/15/76

LIST OF ACRONYMS USED

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| ADAMS | Agencywide Documents Access and Management System |
| CAP | Corrective Action Program |
| CFR | Code of Federal Regulations |
| CR | Condition Reports |
| DRP | Division of Reactor Projects |
| EOP | Emergency Operating Procedures |
| ERO | Emergency Response Organization |
| NRC | United States Nuclear Regulatory Commission |
| PARS | Publicly Available Records |
| SAMG | Severe Accident Management Guidelines |
| SBO | Station Blackout |
| SSC | Structures, Systems, and Components |